

**Publication list
Hendrik Bluhm**

Articles and book contributions:

138. S. Carenco, C.-H. Wu, A. Shavorskiy, H. Bluhm, M. Salmeron, *Synthesis and Structural Evolution of Nickel-Cobalt Nanoparticles under H₂ and CO₂*, Small, in press (2015).
137. D.N. Mueller, M.L. Machala, H. Bluhm, W.C. Chueh, *Surface lattice oxygen redox active in substituted lanthanum iron perovskite-oxide electrocatalysts observed in-operando*, Nat. Comm., in press (2015).
136. A. Dong, Q. Fu, M. Wei, Y. Liu, Y. Ning, F. Yang, H. Bluhm, X. Bao, *Facile oxygen intercalation between full layer graphene and Ru(0001) under ambient conditions*, Surf. Sci., in press (2015).
135. X. Du, B.T. Flynn, J.R. Motley, W.F. Stickle, H. Bluhm, G.S. Herman, *Role of Self-Assembled Monolayers on Improved Electrical Stability of Amorphous In-Ga-Zn-O Thin-Film Transistors*, ECS J. Solid State Sci. Technol. **3**, Q3045 (2014).
134. D.E. Starr, H. Bluhm, *Investigating CO adsorption on PtRu/Ru(0001) near surface alloys with ambient pressure photoelectron spectroscopy*, J. Phys. Chem. C **118**, 29209 (2014).
133. K.A. Perrine, A.M. Margarella, M.H.C. Van Spyk, B. Winter, M. Faubel, H. Bluhm, J.C. Hemminger, *Characterization of the acetonitrile aqueous solution/vapor interface by liquid-jet X-ray photoelectron spectroscopy*, J. Phys. Chem. C **118**, 29378 (2014).
132. A. Shavorskiy, K. Müller, J.T. Newberg, D.E. Starr, H. Bluhm, *Hydroxylation of ultrathin Al₂O₃/NiAl(110) films at environmental humidity*, J. Phys. Chem. C **118**, 29340 (2014).
131. S. Neppl, A. Shavorskiy, I. Zegkinoglou, M. Fraund, D.S. Slaughter, T. Troy, M.P. Ziemkiewicz, M. Ahmed, S. Gul, B. Rude, J.Z. Zhang, A.S. Tremsin, P.-A. Glans, Y.-S. Liu, C.H. Wu, J. Guo, M. Salmeron, H. Bluhm, O. Gessner, *Capturing interfacial photo-electrochemical dynamics with picosecond time-resolved X-ray photoelectron spectroscopy*, Faraday Discuss. **171**, 219 (2014).
130. Y. Yao, Q. Fu, Y. Zhang, X. Weng, H. Li, M. Chen, L. Jin, A. Dong, R. Mu, P. Jiang, L. Liu, H. Bluhm, Z. Liu, S.B. Zhang, X. Bao, *Graphene cover-promoted metal catalyzed reactions*, PNAS **111**, 17023 (2014).
129. S. Nemšák, A. Shavorskiy, O. Karslioglu, I. Zegkinoglou, P.K. Greene, E.C. Burks, K. Liu, A. Rattanachata, C.S. Conlon, A. Keqi, F. Salmassi, E.M. Gullikson, S.-H. Yang, H. Bluhm, C.S. Fadley, *Chemical-state resolved concentration profiles with sub-nm accuracy at solid/gas and solid/liquid interfaces from standing-wave ambient-pressure photoemission*, Nat. Comm. **5**, 5441 (2014).
128. A. Shavorskiy, S. Neppl, D.S. Slaughter, J.P. Cryan, K.R. Siefermann, F. Weise, M.-F. Lin, C. Bacellar, M.P. Ziemkiewicz, I. Zegkinoglou, M.W. Fraund, C. Khurmi, M.P. Hertlein, T.W. Wright, N. Huse, R.W. Schoenlein, T. Tyliszczak, G. Coslovich, J. Robinson, R.A. Kaindl, B.S. Rude, A. Ölsner, S. Mähl, H. Bluhm, O. Gessner, *Sub-Nanosecond Time-Resolved Ambient-Pressure X-ray Photoelectron Spectroscopy Setup for Pulsed and Constant Wave X-ray Light Sources*, Rev. Sci. Instrum. **85**, 093102 (2014).

127. J.H. Frank, A. Shavorskiy, H. Bluhm, B. Coriton, E. Huang, D.L. Osborn, *In situ soft X-ray absorption spectroscopy of flames*, Appl. Phys. B **117**, 493 (2014).
126. K.F. McCarty, M. Monti, S. Nie, D.A. Siegel, E. Starodub, F. El Gabaly, A.H. McDaniel, A. Shavorskiy, T. Tyliszczak, H. Bluhm, N.C. Bartelt, J. de la Figuera, *Oxidation of Magnetite (100) to Hematite Observed by In-situ Spectroscopy and Microscopy*, J. Phys. Chem. C **118**, 19768 (2014).
125. S.A. Tenney, D. Lu, F. He, N. Levy, U.G.E. Perera, D.E. Starr, K. Müller, H. Bluhm, P. Sutter, *Key structure-property relationships in CO₂ capture by supported alkanolamines*, J. Phys. Chem. C **118**, 19252 (2014).
124. K.A. Stoerzinger, W.T. Hong, E.J. Crumlin, H. Bluhm, M.D. Biegalski, Y. Shao-Horn, *Water reactivity on the LaCoO₃ (001) surface: An ambient pressure X-ray photoelectron spectroscopy study*, J. Phys. Chem. C **118**, 19733 (2014).
123. N. Nijem, H. Bluhm, M.L. Ng, M. Kunz, S.R. Leone, M.K. Gilles, *Cu1+ in HKUST-1: selective nitric oxide adsorption in the presence of water*, Chem. Comm. **50**, 10144 (2014).
122. D.J. Miller, H. Sanchez Casalongue, H. Bluhm, H. Ogasawara, A. Nilsson, S. Kaya, *Different reactivity of the various platinum oxides and chemisorbed oxygen in CO oxidation on Pt(111)*, J. Am. Chem. Soc. **136**, 6340 (2014).
121. L. Jin, Q. Fu, A. Dong, Y. Ning, Z. Wang, H. Bluhm, X. Bao, *Surface chemistry of CO on Ru(0001) under the confinement of graphene cover*, J. Phys. Chem. C **118**, 12391 (2014).
120. K.R. Siefermann, C.D. Pemmaraju, S. Neppel, A. Shavorskiy, A.A. Cordones, Josh Vura-Weis, D.S. Slaughter, F.P. Sturm, F. Weisel, H. Bluhm, M.L. Strader, H. Cho, M.-F. Lin, C. Bacellar, C. Khurmi, J. Guo, G. Coslovich, J.S. Robinson, R.A. Kaindl, R.W. Schoenlein, A. Belkacem, D.M. Neumark, S.R. Leone, D. Nordlund, H. Ogasawara, O. Krupin, J.J. Turner, W.F. Schlotter, M.R. Holmes, M. Messerschmidt, M.P. Minitti, S. Gul, J.Z. Zhang, N. Huse, D. Prendergast, O. Gessner, *Atomic scale perspective of ultrafast charge transfer at a dye-semiconductor interface*, J. Phys. Chem. Lett. **5**, 2753 (2014).
119. T. Bartels-Rausch, H.-W. Jacobi, T.F. Kahan, J.L. Thomas, E.S. Thomson, J.P.D. Abbatt, M. Ammann, J.R. Blackford, H. Bluhm, C. Boxe, F. Domine, M.M. Frey, I. Gladich, M.I. Guzmán, D. Heger, Th. Huthwelker, P. Klán, W.F. Kuhs, M.H. Kuo, S. Maus, S.G. Moussa, V.F. McNeill, J.T. Newberg, J.B.C. Pettersson, M. Roeselová, J.R. Sodeau, *A review of air–ice chemical and physical interactions (AICI): liquids, quasi-liquids, and solids in snow*, Atmos. Chem. Phys. Discuss. **14**, 1 (2014).
118. E.J. Crumlin, H. Bluhm, Z. Liu, *In situ investigation of electrochemical devices using ambient pressure photoelectron spectroscopy*, J. Electr. Spectrosc. Rel Phenom. **190**, 84 (2013).
117. Z. Feng, E.J. Crumlin, W.T. Hong, D. Lee, E. Mutoro, M.D. Biegalski, H. Zhou, H. Bluhm, H.M. Christen, Y. Shao-Horn, *In Situ Studies of Temperature-Dependent Surface Structure and Chemistry of Single-Crystalline (001)-Oriented La_{1-x}Sr_xCoO_{3-δ} Perovskite Thin Films*, J. Phys. Chem. Lett. **4**, 1512 (2013).
116. E.J. Crumlin, E. Mutoro, Z. Liu, M.D. Biegalski, W.T. Hong, H.M. Christen, H. Bluhm, Y. Shao-Horn, *In situ ambient pressure X-ray photoelectron spectroscopy of cobalt perovskite surfaces under cathodic polarization at high temperatures*, J. Phys. Chem. C **117**, 16087 (2013).

115. M. Lampimäki, V. Zelenay, A. Křepelová, Z. Liu, R. Chang, H. Bluhm, M. Ammann, *Ozone induced band bending on metal oxide surfaces studied under environmental conditions*, ChemPhysChem. **14**, 2419 (2013).
114. C. Zhang, M.E. Grass, Y. Yu, C. Dejoie, W. Ding, K. Gaskell, N. Jabeen, Y.P. Hong, A. Shavorskiy, H. Bluhm, W.-X. Li, G.S. Jackson, Z. Hussain, Z. Liu, B.W. Eichhorn, *Mechanistic Studies of Water Electrolysis and Hydrogen Electro-Oxidation on High Temperature Ceria-Based Solid Oxide Electrochemical Cells*, J. Am. Chem. Soc. **135**, 11572 (2013).
113. A. Shavorskiy, H. Bluhm, *Ambient pressure X-ray photoelectron spectroscopy*, In: "Handbook of Heterogeneous Catalysts for Clean Technology - Design, Analysis and Application", K. Wilson, A. Lee (Eds.), Wiley - VCH, Weinheim, Germany (2013), pp. 435-466.
112. A.H. McDaniel, W.C. Chueh, A. Shavorskiy, T. Tyliszczak, H. Bluhm, K.F. McCarty, F. El Gabaly, *Probing surface and bulk states of cathode materials with synchrotron-based soft X-rays in a functioning solid oxide fuel cell*, ECS Transactions **58**, 47 (2013).
111. D.E. Starr, Z. Liu, M. Hävecker, A. Knop-Gericke, H. Bluhm, *Investigation of solid/vapor interfaces using ambient pressure X-ray photoelectron spectroscopy*, Chem. Soc. Rev. **42**, 5833 (2013).
110. S. Carencio, A. Tuxen, M. Chintapalli, E. Pach, C. Escudero, T.D. Ewers, P. Jiang, F. Borondics, G. Thornton, A.P. Alivisatos, H. Bluhm, Z. Liu, J. Guo, M. Salmeron, *De-alloying of Cobalt from CuCo Nanoparticles under Syngas Exposure*, J. Phys. Chem. C **117**, 6259 (2013).
109. F. El Gabaly, K.F. McCarty, H. Bluhm, A.H. McDaniel, *Oxidation stages of Ni electrodes in solid oxide fuel cell environments*, Phys. Chem. Chem. Phys. **15**, 8334 (2013).
108. D.E. Starr, H. Bluhm, Z. Liu, A. Knop-Gericke, M. Hävecker, *Application of Ambient Pressure X-ray Photoelectron Spectroscopy for the In-situ Investigation of Heterogeneous Catalytic Reactions*, "In-situ Characterization of Heterogeneous Catalysts", J.A. Rodriguez, J.C. Hanson, P.J. Chupas (Eds.), John Wiley & Sons, Inc., NY, pp. 315-344 (2013).
107. T. Kendelewicz, S. Kaya, J.T. Newberg, H. Bluhm, N. Mulakaluri, W. Moritz, M. Scheffler, A. Nilsson, R. Pentcheva, G.E. Brown, Jr., *X-ray photoemission and density functional theory study of the interaction of water vapor with the Fe₃O₄(001) surface at near-ambient conditions*, J. Phys. Chem. C **117**, 2719 (2013).
106. O. Rosseler, M. Sleiman, V. Nahuel Montesinos, A. Shavorskiy, V. Keller, N. Keller, M.I. Litter, H. Bluhm, M. Salmeron, H. Destaillats, *Chemistry of NO_x on TiO₂ surfaces studied by ambient pressure XPS: products, effect of UV irradiation, water and coadsorbed potassium*, J. Phys. Chem. Lett. **4**, 536 (2013).
105. A. Krepelová, Th. Bartels-Rausch, M.A. Brown, H. Bluhm, M. Ammann, *The adsorption of acetic acid on ice studied by ambient pressure XPS and partial electron yield NEXAFS at 230-240 K*, J. Phys. Chem. A **117**, 401 (2013).
104. S. Kaya, S. Yamamoto, J.T. Newberg, H. Bluhm, H. Ogasawara, T. Kendelewicz, G.E. Brown, Jr., L.G.M. Pettersson, A. Nilsson, *High density liquid like structures in thin water films on BaF₂(111) under ambient conditions*, Sci. Rep. **3**, 1074 (2013).
103. P. Jiang, D. Prendergast, F. Borondics, S. Porsgaard, L. Giovanetti, E. Pach, J.T. Newberg, H. Bluhm, F. Besenbacher, M. Salmeron, *Experimental and theoretical investigation of the*

electronic structure of Cu₂O and CuO thin films on Cu(110) using x-ray photoelectron and absorption spectroscopy, J. Chem. Phys. **138**, 024704 (2013).

102. D.E. Starr, H. Bluhm, *CO adsorption and dissociation on Ru(0001) at elevated pressures*, Surf. Sci. **608**, 241 (2013).
101. A. Shavorskiy, T. Eralp, K. Schulte, H. Bluhm, G. Held, *Surface chemistry of glycine on Pt(111) in different aqueous environments*, Surf. Sci. **607**, 10 (2013).
100. T. Bartels-Rausch, H.-W. Jacobi, T.F. Kahan, J.L. Thomas, E.S. Thomson, J.P.D. Abbatt, M. Ammann, J.R. Blackford, H. Bluhm, C. Boxe, F. Domine, M.M. Frey, I. Gladich, M.I. Guzmán, D. Heger, Th. Huthwelker, P. Klán, W.F. Kuhs, M.H. Kuo, S. Maus, S.G. Moussa, V.F. McNeill, J.T. Newberg, J.B.C. Pettersson, M. Roeselová, J.R. Sodeau, *Relationship between snow microstructure and physical and chemical processes*, Atmos. Chem. Phys. Discuss. **12**, 30409 (2012).
99. C. Zhang, M.E. Grass, Y. Yu, K.J. Gaskell, S.C. DeCaluwe, G.S. Jackson, Z. Hussain, H. Bluhm, Z. Liu, B.W. Eichhorn, *Multi-element activity mapping and potential mapping in solid oxide electrochemical cells through the use of in operando XPS*, ACS Catalysis **2**, 2297 (2012).
98. F. El Gabaly, A.H. McDaniel, M.E. Grass, W. Chueh, H. Bluhm, Z. Liu, K.F. McCarty, *Electrochemical intermediate species and reaction pathway in H₂ oxidation on solid electrolytes*, Chem. Comm. **48**, 8338 (2012).
97. W.C. Chueh, A.H. McDaniel, M.E. Grass, Y. Hao, N. Jabeen, Z. Liu, S.M. Haile, K.F. McCarty, H. Bluhm, F. El Gabaly, *Highly enhanced concentration and stability of reactive Ce³⁺ on doped CeO₂ surface revealed in operando*, Chem. Mater. **24**, 1876 (2012).
96. O. Balmes, A. Resta, D. Wermeille, R. Felici, M.E. Messing, K. Deppert, Z. Liu, M.E. Grass, H. Bluhm, R. Van Rijn, J.W.M. Frenken, R. Westerström, S.E.J. Blomberg, J.N. Andersen, J. Gustafson, E. Lundgren, *Bridging the material gap: Reversible formation of a PdC_x phase on Pd nanoparticles upon CO and O₂ exposure*, Phys. Chem. Chem. Phys. **14**, 4796 (2012).
95. M.H. Cheng, K.M. Callahan, A.M. Margarella, D.J. Tobias, J.C. Hemminger, H. Bluhm, M.J. Krisch, *Ambient Pressure X-ray Photoelectron Spectroscopy and Molecular Dynamics Simulation Studies of Liquid/Vapor Interfaces of Aqueous NaCl, RbCl, and RbBr Solutions*, J. Phys. Chem. C **116**, 4545 (2012).
94. E.J. Crumlin, E. Mutoro, Z. Liu, M.E. Grass, M.D. Biegalski, Y.-L. Lee, D. Morgan, H.M. Christen, H. Bluhm, Y. Shao-Horn, *Surface Strontium Enrichment on Highly Active Perovskites for Oxygen Electrocatalysis in Solid Oxide Fuel Cells*, Energy Environ. Sci. **5**, 6081 (2012).
93. D.R. Butcher, M.E. Grass, Z. Zeng, F. Aksoy, H. Bluhm, G.A. Somorjai, W.-X. Li, B.S. Mun, Z. Liu, *In-situ Oxidation Study of Pt(110) and its Interaction with CO*, J. Am. Chem. Soc. **133**, 20319 (2011).
92. H. Bluhm, *X-ray photoelectron spectroscopy (XPS) for in situ characterization of thin film growth*, In: “In situ characterization of thin film growth”, G. Koster, G. Rijnders (Eds.), Woodhead Publishing Ltd, Cambridge, UK (2011), pp. 75-98.
91. D.E. Starr, D. Pan, J.T. Newberg, M. Ammann, E.G. Wang, A. Michaelidis, H. Bluhm, *Acetone adsorption on ice investigated by X-ray spectroscopy and density functional theory*, Phys. Chem. Chem. Phys. **13**, 19988 (2011).

90. D. J. Miller, H. Öberg, S. Kaya, H. Sanchez Casalongue, D. Friebel, T. Anniyev, H. Ogasawara, H. Bluhm, L. G. M. Pettersson, A. Nilsson, *Oxidation of Pt(111) under near-ambient conditions*, Phys. Rev. Lett. **107**, 195502 (2011).
89. L.R. Merte, J. Knudsen, F.M. Eichhorn, S. Porsgaard, H. Zeuthen, L.C. Grabow, E. Lægsgaard, H. Bluhm, M. Salmeron, M. Mavrikakis, F. Besenbacher, *CO-induced embedding of Pt adatoms in a partially-reduced FeOx film on Pt(111)*, J. Am. Chem. Soc. **133**, 10692 (2011).
88. J.T. Newberg, D.E. Starr, S. Porsgaard, S. Yamamoto, S. Kaya, E.R. Mysak, T. Kendelewicz, M. Salmeron, G.E. Brown, Jr., A. Nilsson, H. Bluhm, *Auto-catalytic surface hydroxylation of MgO(100) terrace sites observed under ambient conditions*, J. Phys. Chem. C **115**, 12864 (2011).
87. K. Arima, H. Bluhm, M. Salmeron, *In situ Observation of Deliquesced Droplets of Alkali Halide Nanocrystals: Investigation of Ion Segregation in Droplets for Environmental Science*, J. Surf. Sci. Soc. Japan **32**, 368 (2011). (in Japanese)
86. R. Westerström, M.E. Messing, S. Blomberg, A. Hellman, H. Grönbeck, J. Gustafson, N.M. Martin, O. Balmes, R. van Rijn, J.N. Andersen, K. Deppert, H. Bluhm, Z. Liu, M.E. Grass, M. Hävecker, E. Lundgren, *Oxidation and reduction of Pd(100) and aerosol-deposited Pd nanoparticles*, Phys. Rev. B **83**, 115440 (2011).
85. A. Shavorskiy, F. Aksoy, M. Grass, Z. Liu, H. Bluhm, G. Held, *A Step toward the Wet Surface Chemistry of Glycine and Alanine on Cu{110}: Destabilization and Decomposition in the Presence of Near-Ambient Water Vapor*, J. Am. Chem. Soc. **133**, 6659 (2011).
84. E.R. Mysak, J.D. Smith, J.T. Newberg, P.D. Ashby, K.R. Wilson, H. Bluhm, *Competitive Reaction Pathways for Functionalization and Volatilization in the Heterogeneous Oxidation of Coronene Thin Films by Hydroxyl Radicals and Ozone*, Phys. Chem. Chem. Phys. **13**, 7554 (2011).
83. S. Porsgaard, P. Jiang, S. Borondics, S. Wendt, H. Bluhm, F. Besenbacher, M. Salmeron, *Charge State of Au Nanoparticles Supported on TiO₂ at 1 Torr O₂ Pressure*, Ang. Chem. Int. Ed. **50**, 2266 (2011).
82. E. de Smit, M.M. van Schooneveld, F. Cinquini, H. Bluhm, Ph. Sautet, F.M.F. de Groot, B.M. Weckhuysen, *On the Size Dependence of the Surface Chemistry of Iron Oxide in Reactive Gas Atmospheres*, Angew. Chem. Int. Ed. **50**, 1584 (2011).
81. J.H. Kroll, N.M. Donahue, J.L. Jimenez, S.H. Kessler, M.R. Canagaratna, K.R. Wilson, K.E. Altieri, L.R. Mazzoleni, A.S. Wozniak, H. Bluhm, E.R. Mysak, J.D. Smith, C.E. Kolb, D.R. Worsnop, *Carbon oxidation state as a metric for describing the chemistry of atmospheric organic aerosol*, Nat. Chem. **3**, 331 (2011).
80. K.R. Wilson, H. Bluhm, M. Ahmed, *Aerosol photoemission*, In: “Fundamentals and Applications in Aerosol Spectroscopy”, R. Signorell, J.P. Reid (Eds.), CRC Press, Boca Raton (2011), pp. 367-399.
79. J.T. Newberg, D.E. Starr, S. Porsgaard, S. Yamamoto, S. Kaya, E.R. Mysak, T. Kendelewicz, M. Salmeron, G.E. Brown, Jr., A. Nilsson, H. Bluhm, *Formation of hydroxyl and water layers on MgO films studied with ambient pressure XPS*, Surf. Sci. **605**, 89 (2011).

78. A. Krepelová, T. Huthwelker, H. Bluhm, M. Ammann, *Surface chemical properties of eutectic and frozen NaCl solutions probed by XPS and NEXAFS*, ChemPhysChem. **11**, 3859 (2010).
77. S.C. DeCaluwe, M.E. Grass, C. Zhang, F. El Gabaly, H. Bluhm, Z. Liu, G.S. Jackson, A.H. McDaniel, K.F. McCarty, R.L. Farrow, M.A. Linne, Z. Hussain, B.W. Eichhorn, *In situ characterization of ceria oxidation states in high-temperature electrochemical cells with ambient pressure XPS*, J. Phys. Chem. C **114**, 19853 (2010).
76. K. Arima, P. Jiang, X. Deng, H. Bluhm, M. Salmeron, *Water adsorption, solvation and deliquescence of alkali halide thin films on SiO₂ studied using ambient pressure photoelectron spectroscopy*, J. Phys. Chem. C **114**, 14900 (2010).
75. J.A. Whaley, A.H. McDaniel, F. El Gabaly, R.L. Farrow, M.E. Grass, Z. Hussain, Z. Liu, M.A. Linne, H. Bluhm, K.F. McCarty, *Fixture for in situ and in operando characterization of electrochemical devices in traditional vacuum systems*, Rev. Sci. Instrum. **81**, 086104 (2010).
74. F. El Gabaly, A.H. McDaniel, M.E. Grass, Z. Liu, H. Bluhm, M.A. Linne, Z. Hussain, R.L. Farrow, K.F. McCarty, *Measuring individual overpotentials in an operating solid-oxide electrochemical cell*, Phys. Chem. Chem. Phys. **12**, 12138 (2010).
73. C. Zhang, M.E. Grass, A.H. McDaniel, S.C. DeCaluwe, F. El Gabaly, Z. Liu, K.F. McCarty, R.L. Farrow, M.A. Linne, Z. Hussain, G.S. Jackson, H. Bluhm, B.W. Eichhorn, *Measuring fundamental properties in operating solid oxide electrochemical cells by using in situ X-ray photoelectron spectroscopy*, Nat. Mater. **9**, 944 (2010).
72. A. Krepelová, J.T. Newberg, T. Huthwelker, H. Bluhm, M. Ammann, *The nature of nitrate at the ice surface studied by XPS and NEXAFS*, Phys. Chem. Chem. Phys. **12**, 8870 (2010).
71. M.E. Messing, R. Westerström, B.O. Meuller, S.E.J. Blomberg, J. Gustafson, J.N. Andersen, E. Lundgren, R. Van Rijn, O. Balmers, H. Bluhm, K. Deppert, *Generation of Pt model catalyst nanoparticles by spark discharge*, J. Phys. Chem. C **114**, 9257 (2010).
70. F. Tao, S. Dag, L.-W. Wang, Z. Liu, D.R. Butcher, H. Bluhm, M. Salmeron, G.A. Somorjai, *Break-up of Pt catalyst surfaces by high CO coverage*, Science **327**, 850 (2010).
69. P. Jiang, S. Porsgaard, F. Borondics, M. Köber, A. Caballero, H. Bluhm, F. Besenbacher, M. Salmeron, *Room-temperature reaction of oxygen with gold: an in situ X-ray photoelectron spectroscopy investigation*, J. Am. Chem. Soc. **132**, 2858 (2010).
68. S. Yamamoto, T. Kendelewicz, J.T. Newberg, G. Ketteler, D.E. Starr, E.R. Mysak, K. Andersson, H. Ogasawara, H. Bluhm, M. Salmeron, G.E. Brown, Jr., A. Nilsson, *Water adsorption on α-Fe₂O₃(0001) at near ambient conditions*, J. Phys. Chem. C **114**, 2256 (2010).
67. E.R. Mysak, D.E. Starr, K.R. Wilson, H. Bluhm, *A combined aerodynamic lens/ambient pressure photoemission spectrometer for the on-stream analysis of aerosol surfaces*, Rev. Sci. Instrum. **81**, 016106 (2010).
66. H. Bluhm, *Photoelectron spectroscopy of surfaces under humid conditions*, J. Electron Spectrosc. Relat. Phenom. **177**, 71 (2010).
65. A.H. McDaniel, F. El Gabaly, E. Akhadov, R.L. Farrow, K.F. McCarty, M.A. Linne, S.C. Decaluwe, C. Zhang, B. Eichhorn, G.S. Jackson, Z. Liu, M. Grass, Z. Hussain, and H. Bluhm,

In-situ Investigation of SOFC Patterned Electrodes Using Ambient-Pressure X-ray Photoelectron Spectroscopy, ECS Transactions **25**, 335 (2009).

64. M.D. Baer, I-F.W. Kuo, H. Bluhm, S. Ghosal, *Interfacial behavior of perchlorate versus chloride ions in aqueous solutions*, J. Phys. Chem. B **113**, 15843 (2009).
63. R. Jribi, E. Barthel, H. Bluhm, M. Grunze, P. Koelsch, D. Verreault, E. Sondergård, *UV-irradiation suppresses adhesion on TiO₂*, J. Phys. Chem. C **113**, 8273 (2009).
62. H. Bluhm, H.C. Siegmann, *Surface science with aerosols*, Surf. Sci. **603**, 1969 (2009).
61. D.E. Starr, Ch.D. Weis, S. Yamamoto, A. Nilsson, H. Bluhm, *NO₂ adsorption on Ag(100) supported MgO(100) thin films: Controlling the adsorption state with film thickness*, J. Phys. Chem. C **113**, 7355 (2009).
60. S.C. DeCaluwe, G.S. Jackson, R.L. Farrow, A.H. McDaniel, F. El Gabaly, K.F. McCarty, M.A. Linne, H. Bluhm, J.T. Newberg, Z. Liu, and Z. Hussain, *In Situ XPS for Evaluating Ceria Oxidation States in SOFC Anodes*, ECS Transactions **16**, 253 (2009).
59. D.F. Ogletree, H. Bluhm, E.L.D. Hebenstreit, M. Salmeron, *Photoelectron spectroscopy under ambient pressure and temperature conditions*, Nucl. Instrum. Meth. A **601**, 151 (2009).
58. A. Knop-Gericke, E. Kleimenov, M. Hävecker, R. Blume, D. Teschner, S. Zafeiratos, R. Schlögl, V.I. Bukhtiyarov, V.V. Kaichev, I.V. Prosvirin, A.I. Nizovskii, H. Bluhm, A. Barinov, P. Dudin, M. Kiskinova, *High-pressure X-ray photoelectron spectroscopy: a tool to investigate heterogeneous catalytic processes*, In: B.C. Gates, H. Knözinger, eds: Advances in Catalysis, Vol. **52**, Burlington: Academic Press, 2009, pp. 213-272.
57. M. Salmeron, H. Bluhm, M. Tatarkhanov, G. Ketteler, T. Shimizu, A. Mugarza, X. Deng, T. Herranz, S. Yamamoto, A. Nilsson, *Water growth on metals and oxides: binding, dissociation and role of hydroxyl groups*, Faraday Disc. **141**, 221 (2009).
56. M.E. Grass, D. Butcher, Y. Zhang, Y. Li, H. Bluhm, K. Bratlie, T. Zhang, J.Y. Park, G.A. Somorjai, *Observation and size dependence of reactive oxide overlayer on Rh nanoparticles during CO oxidation by ambient pressure X-ray photoelectron spectroscopy*, Angew. Chem. Int. Ed. **47**, 8893 (2008).
55. S. Ghosal, M.A. Brown, M. Krisch, H. Bluhm, M. Salmeron, P. Jungwirth, J.C. Hemminger, *Ion partitioning at the liquid/vapor interface of multi-component alkali halide solutions – a model for sea salt aerosol*, J. Phys. Chem. A **112**, 12378 (2008).
54. X. Deng, A. Verdaguer, T. Herranz, Ch.D. Weiss, H. Bluhm, M. Salmeron, *Surface chemistry of Cu in the presence of CO₂ and H₂O*, Langmuir **24**, 9474 (2008).
53. A. Verdaguer, J.J. Segura, J. Fraxedas, H. Bluhm, M. Salmeron, *Correlation between charge state of insulating NaCl surfaces and ionic mobility induced by water adsorption: a combined ambient pressure X-ray photoelectron spectroscopy and scanning force microscopy study*, J. Phys. Chem. C **112**, 16898 (2008).
52. S. Günther, A. Scheibe, H. Bluhm, M. Hävecker, E. Kleimenov, A. Knop-Gericke, R. Schlögl, R. Imbihl, *In situ X-ray photoelectron spectroscopy of catalytic ammonia oxidation over a Pt(533) surface*, J. Phys. Chem. C **112**, 15382 (2008).

51. M.A. Brown, R. D'Auria, I.-F.W. Kuo, M.J. Krisch D.E. Starr, H. Bluhm, D.J. Tobias, J.C. Hemminger, *Ion spatial distributions at the liquid-vapor interface of aqueous potassium fluoride*, Phys. Chem. Chem. Phys. **10**, 4778 (2008).
50. D. Nordlund, M. Odelius, H. Bluhm, H. Ogasawara, L.G.M. Pettersson, A. Nilsson, *Electronic structure effects in liquid water studied by photoelectron spectroscopy and density functional theory*, Chem. Phys. Lett. **460**, 86 (2008).
49. X. Deng, T. Herranz, Ch. Weis, H. Bluhm, M. Salmeron, *Adsorption of water on CuO₂ and Al₂O₃ thin films*, J. Phys. Chem. C **112**, 9668 (2008).
48. D.E. Starr, E.K. Wong, D.R. Worsnop, K.R. Wilson, H. Bluhm, *A combined droplet train and ambient pressure photoemission spectrometer for the investigation of liquid/vapor interfaces*, Phys. Chem. Chem. Phys. **10**, 3093 (2008).
47. K. Andersson, G. Ketteler, H. Bluhm, S. Yamamoto, H. Ogasawara, L.G.M. Pettersson, M. Salmeron, A. Nilsson, *Auto-catalytic water dissociation on Cu(110) at near ambient conditions*, J. Am. Chem. Soc. **130**, 2793 (2008).
46. S. Yamamoto, H. Bluhm, K. Andersson, G. Ketteler, H. Ogasawara, M. Salmeron, A. Nilsson, *In situ X-ray photoelectron spectroscopy of water on metals and oxides under ambient conditions*, J. Phys.: Condens. Matt. **20**, 184025 (2008).
45. G. Ketteler, P. Ashby, B.S. Mun, I. Ratera, H. Bluhm, B. Kasemo, M. Salmeron, *In situ photoelectron spectroscopy of water adsorption on model biomaterial surfaces*, J. Phys.: Condens. Matt. **20**, 184024 (2008).
44. H. Bluhm, M. Hävecker, A. Knop-Gericke, M. Kiskinova, R. Schlögl, M. Salmeron, *In situ photoemission studies of gas/solid interfaces at near atmospheric pressures*, MRS Bull. **32**, 1022 (2007).
43. D. Nordlund, H. Ogasawara, H. Bluhm, O. Takahashi, M. Odelius, M. Nagasono, L.G.M. Pettersson, A. Nilsson, *Probing the electron delocalization in liquid water and ice at attosecond time scales*, Phys. Rev. Lett. **99**, 217406 (2007).
42. A. Verdaguer, Ch.D. Weis, G. Oncins, G. Ketteler, H. Bluhm, M. Salmeron, *Growth and structure of water on SiO₂ films on Si investigated by Kelvin probe microscopy and in situ X-ray spectroscopies*, Langmuir **23**, 9699 (2007). (LBNL 62353)
41. K. Andersson, G. Ketteler, H. Bluhm, S. Yamamoto, H. Ogasawara, L.G.M. Pettersson, M. Salmeron, A. Nilsson, *Bridging the Pressure Gap in Water and Hydroxyl Chemistry on Metal Surfaces: The Cu(110) Case*, J. Phys. Chem. C **111**, 14493 (2007). (LBNL 63400)
40. M. Krisch, R. D'Auria, M.A. Brown, D.J. Tobias, J.C. Hemminger, M. Ammann, D.E. Starr, H. Bluhm, *The effect of an organic surfactant on the liquid-vapor interface of an electrolyte solution*, J. Phys. Chem. C **111**, 13497 (2007). (LBNL 63421)
39. G. Ketteler, S. Yamamoto, H. Bluhm, K. Andersson, D.E. Starr, D.F. Ogletree, H. Ogasawara, A. Nilsson, M. Salmeron, *The nature of water nucleation on TiO₂(110) surfaces revealed by ambient pressure X-ray photoelectron spectroscopy*, J. Phys. Chem. C **111**, 8278 (2007). (LBNL 60944)
38. S. Yamamoto, K. Andersson, H. Bluhm, G. Ketteler, D.E. Starr, Th. Schiros, H. Ogasawara, L.G.M. Pettersson, M. Salmeron, A. Nilsson, *Hydroxyl induced wetting of metals by water at near ambient conditions*, J. Phys. Chem. C **111**, 7848 (2007). (LBNL 62687)

37. A. Virnovskaia, S. Jørgensen, J. Hafizovic, Ø. Prytz, E. Kleimenov, M. Hävecker, H. Bluhm, A. Knop-Gericke, R. Schlögl, U. Olsbye, *In situ XPS investigation of Pt(Sn)/Mg(Al)O catalysts during ethane dehydrogenation experiments*, Surf. Sci. **601**, 30 (2007).
36. V.I. Bukhtiyarov, A.I. Nizovskii, H. Bluhm, M. Hävecker, E. Kleimenov, A. Knop-Gericke, R. Schlögl, *Combined in-situ XPS and MS study of ethylene epoxidation over silver*, J. Catal. **238**, 260 (2006).
35. E.A. Willneff, S. Braun, D. Rosenthal, H. Bluhm, M. Hävecker, E. Kleimenov, A. Knop-Gericke, R. Schlögl, S.L.M. Schroeder, *Dynamic electronic structure of a Au/TiO₂ catalyst under reaction conditions*, J. Am. Chem. Soc. **128**, 12052 (2006).
34. A. Verdaguer, G.M. Sacha, H. Bluhm, M. Salmeron, *The molecular structure of water interfaces: Wetting at the nanometer scale*, Chem. Rev. **106**, 1478 (2006).
33. H. Bluhm, K. Andersson, T. Araki, K. Benzerara, G.E. Brown, J.J. Dynes, S. Ghosal, M.K. Giles, H.-Ch. Hansen, J.C. Hemminger, A.P. Hitchcock, G. Ketteler, A.L.D. Kilcoyne, E. Kneedler, J.R. Lawrence, G.G. Leppard, J. Majzlam, B.S. Mun, S.C.B. Myneni, A. Nilsson, H. Ogasawara, D.F. Ogletree, K. Pecher, M. Salmeron, D.K. Shuh, B. Tonner, T. Tyliszczak, T. Warwick, T.H. Yoon, *Soft X-ray Microscopy and Spectroscopy at the Molecular Environmental Science Beamline at the Advanced Light Source*, J. Electron Spectrosc. Relat. Phenom. **150**, 86-104 (2006).
32. O. Takahashi, M. Odelius, D. Nordlund, A. Nilsson, H. Bluhm, L.G.M. Pettersson, *Auger decay calculations with core-hole excited state Molecular Dynamics simulations of water*, J. Chem. Phys. **124**, 064307 (2006).
31. G. Ketteler, D.F. Ogletree, H. Bluhm, H. Liu, E.L.D. Hebenstreit, M. Salmeron, *In situ spectroscopic study of the oxidation and reduction of Pd(111)*, J. Am. Chem. Soc. **127**, 18269-18273 (2005).
30. R. Würz, M. Rusu, Th. Schedel-Niedrig, M.Ch. Lux-Steiner, H. Bluhm, M. Hävecker, E. Kleimenov, A. Knop-Gericke, R. Schlögl, *In situ photoelectron spectroscopy study of the oxidation of CuGaSe₂*, Surf. Sci. **580**, 80-94 (2005).
29. D. Teschner, A. Pstryakov, E. Kleimenov, M. Hävecker, H. Bluhm, H. Sauer, A. Knop-Gericke, R. Schlögl, *High-pressure XPS on palladium model hydrogenation catalysts. Part 1: Effect of gas ambient and temperature*, J. Catal. **230**, 186-194 (2005).
28. D. Teschner, A. Pstryakov, E. Kleimenov, M. Hävecker, H. Bluhm, H. Sauer, A. Knop-Gericke, R. Schlögl, *High-pressure XPS on palladium model hydrogenation catalysts. Part 2: Hydrogenation of trans-2-pentene on palladium*, J. Catal. **230**, 195-203 (2005).
27. S. Ghosal, J.C. Hemminger, H. Bluhm, B.S. Mun, E.L.D. Hebenstreit, G. Ketteler, D.F. Ogletree, F.G. Requejo, M. Salmeron, *Direct Observation of Halide Enhancement at the Vapor/Alkali Halide Solution Interface*, Science **307**, 563 (2005).
26. E. Kleimenov, H. Bluhm, M. Hävecker, A. Knop-Gericke, A. Pstryakov, D. Teschner, J. A. Lopez-Sanchez, J. K. Bartley, G.J. Hutchings, R. Schlögl, *XPS investigations of VPO catalysts under reaction conditions*, Surf. Sci. **575**, 181 (2005).
25. F. Morales, F. de Groot, P. Glatzel, E. Kleimenov, H. Bluhm, M. Hävecker, A. Knop-Gericke, B. Weckhuysen, *In-situ x-ray absorption of Co/Mn/TiO₂ catalysts for Fischer-Tropsch synthesis*, J. Phys. Chem. B. **108**, 16121 (2004).

24. A. Borgna, B.G. Anderson, A. Saib, J.W. Niemantsverdriet, H. Bluhm, M. Hävecker, A. Knop-Gericke, A.E.T. Kuiper, Y. Tamminga, *Pt-Co/SiO₂ Bimetallic Planar Model Catalysts for Selective Hydrogenation of α,β -unsaturated Aldehydes*, J. Phys. Chem B **108**, 17905-17914 (2004).
23. H. Bluhm, M. Hävecker, A. Knop-Gericke, D. Teschner, E. Kleimenov, V.I. Bukhtiyarov, D.F. Ogletree, M. Salmeron, R. Schlögl, *Methanol oxidation on a copper catalyst investigated using in situ X-ray photoelectron spectroscopy*, J. Phys. Chem. B. **108**, 14340 (2004).
22. M. Hävecker, A. Knop-Gericke, H. Bluhm, E. Kleimenov, R.W. Mayer, A. Liskowski, D. Su, M. Fait, R. Schlögl, *Dynamic surface behaviour of VPO catalysts under reactive and non-reactive gas compositions: an in-situ XAS study*, Appl. Surf. Sci. **230**, 272-282 (2004).
21. M. Heijboer, A. A. Battiston, A. Knop-Gericke, M. Hävecker, R. Mayer, H. Bluhm, R. Schlögl, B. M. Weckhuysen, D. C. Koningsberger, F. M. F. de Groot, *In Situ Soft X-ray absorption of Over-exchanged Fe/ZSM5*, J. Phys. Chem. B **107**, 13069 (2003).
20. W.M. Heijboer, A.A. Battiston, A. Knop-Gericke, M. Hävecker, H. Bluhm, B.M. Weckhuysen, D.C. Koningsberger, F.M.F. de Groot, *Redox behavior of over-exchanged Fe/ZSM5 zeolites studied with in-situ soft X-ray absorption spectroscopy*, Phys. Chem. Chem. Phys. **5**, 4484 (2003).
19. M. Hävecker, R.W. Mayer, A. Knop-Gericke, H. Bluhm, E. Kleimenov, A. Liskowski, D. Su, R. Follath, F. G. Requejo, D. F. Ogletree, M. Salmeron, J.A. Lopez-Sanchez, J. K. Bartley, G. J. Hutchings, R. Schlögl, *In situ investigation of the nature of the active surface of a vanadyl pyrophosphate catalyst during n-butane oxidation to maleic anhydride*, J. Phys. Chem. B. **107**, 4587 (2003).
18. H. Bluhm, M. Hävecker, E. Kleimenov, A. Knop-Gericke, A. Liskowski, R. Schlögl, D. Su, *In-situ Surface Analysis in Selective Oxidation Catalysis: Butane Conversion over VPP*, Top. Catal. **23**, 99 (2003).
17. D.F. Ogletree, H. Bluhm, G. Lebedev, C.S. Fadley, Z. Hussain, M. Salmeron, *A differentially pumped electrostatic lens system for photoemission studies in the millibar range*, Rev. Sci. Instrum. **73**, 3872 (2002). H. Bluhm, D.F. Ogletree, Ch. Fadley, Z. Hussain, and M. Salmeron, *The premelting of ice studied with photoelectron spectroscopy*, J. Phys.: Condens. Matter **14**, L227 (2002).
16. M. Hävecker, A. Knop-Gericke, R.W. Mayer, M. Fait, H. Bluhm, R. Schlögl, *Influence of the geometric structure on the V L₃ near edge X-ray absorption fine structure from vanadium phosphorous oxide catalysts*, J. Electron Spectrosc. Relat. Phenom. **125**, 79 (2002).
15. H. Bluhm, T. Inoue, and M. Salmeron, *Formation of dipole-oriented water films on mica substrates at ambient conditions*, Surf. Sci. Lett. **426**, L599 (2000).
14. H. Bluhm, T. Inoue, and M. Salmeron, *Friction of ice measured using lateral force microscopy*, Phys. Rev. B **61**, 7760 (2000).
13. M. Salmeron and H. Bluhm, *Structure and properties of ice and water film interfaces in equilibrium with vapor*, Surf. Rev. Lett. **6**, 1275 (1999).
12. H. Bluhm and M. Salmeron, *The growth of nanometer thin ice films from water vapor studied using scanning polarization force microscopy*, J. Chem. Phys. **111**, 6947 (1999).

11. L. Xu, H. Bluhm, and M. Salmeron, *An AFM study of the tribological properties of NaCl(100) surfaces under moist air*, Surf. Sci. **407**, 251 (1998).
10. H. Bluhm, S. H. Pan, L. Xu, T. Inoue, D. F. Ogletree, M. Salmeron, *Scanning force microscope and vacuum chamber for the study of ice films: Design and first results*, Rev. Sci. Instrum. **69**, 1781 (1998).
9. H. Bluhm, U. D. Schwarz, R. Wiesendanger, *Origin of the ferroelectric domain contrast observed in lateral force microscopy*, Phys. Rev. B. **57**, 161 (1997).
8. H. Bluhm, A. Wadas, R. Wiesendanger, A. Roshko, J.A. Aust, D. Nam, *Imaging of domain-inverted gratings in LiNbO₃ by electrostatic force microscopy*, Appl. Phys. Lett. **71**, 146 (1997).
7. H. Bluhm, K.-P. Meyer, R. Wiesendanger, *The topographical structure of the domain boundary on the triglycine sulfate (010) surface*, Ferroelectrics **200**, 327 (1997).
6. H. Bluhm, A. Wadas, K.-P. Meyer, L. Szczesniak, R. Wiesendanger, *Electrostatic force microscopy on ferroelectric crystals in inert gas atmosphere*, Phys. Rev. B **55**, 4 (1997).
5. H. Bluhm, K.-P. Meyer, R. Wiesendanger, *Surface structure of ferroelectric domains on TGS*, J. Vac. Sci. Technol. B **14**, 1180 (1996).
4. U.D. Schwarz, H. Bluhm, H. Hölscher, W. Allers, R. Wiesendanger, *Friction in the low-load regime: Studies on the pressure and direction dependence of frictional forces by means of friction force microscopy*, in: "The Physics of Sliding Friction", ed. by B.N.J. Persson, NATO ASI Series, Kluwer, Dordrecht, p. 369-402 (1996).
3. H. Bluhm, U.D. Schwarz, K.-P. Meyer, R. Wiesendanger, *Anisotropy of sliding friction on the TGS (010) surface*, Appl. Phys. A **61**, 525 (1995).
2. A. Schwarz, U.D. Schwarz, H. Bluhm, R. Wiesendanger, *Determination of Miller indices of side faces of small crystallites from scanning force microscopy angle measurements*, Surf. Interface Anal. **23**, 409 (1995).
1. H. Bluhm, U.D. Schwarz, F. Herrmann, P. Paufler, *Study of the influence of native oxide layers on atomic force microscopy imaging of semiconductor surfaces*, Appl. Phys. A **59**, 23-27 (1994).

Technical Reports and Meeting Abstracts:

A. Shavorskiy, O. Karslioglu, I. Zegkinoglou, H. Bluhm, *Synchrotron-based ambient pressure X-ray photoelectron spectroscopy*, Synchrotron Radiation News **27**, 14 (2014).

A. Shavorskiy, A. Cordones, J. Vura-Weis, K. Siefermann, D. Slaughter, F. Sturm, F. Weise, H. Bluhm, M. Strader, H. Cho, M.-F. Lin, C. Bacellar, C. Khurmi, M. Hertlein, J. Guo, T. Tyliszczak, D. Prendergast, G. Coslovich, J. Robinson, R.A. Kaindl, R.W. Schoenlein, A. Belkacem, Th. Weber, D.M. Neumark, S.R. Leone, D. Nordlund, H. Ogasawara, A.R. Nilsson, O. Krupin, J.J. Turner, W.F. Schlotter, M.R. Holmes, P.A. Heimann, M. Messerschmidt, M.P. Miniti, M. Beye, S. Gul, J.Z. Zhang, N. Huse, O. Gessner, *Techniques for real-time studies of interfacial charge transfer dynamics*, AIP Conf. Proc. **1525**, 475 (2013).

L. Tamura, M. Ahmed, S. Bailey, H. Bluhm, J.-H. Guo, C. Heske, A. Hexemer, Z. Liu, A. MacDowell, M.A. Marcus, H. Padmore, R. Schoenlein, S. Teat, T. Tyliszczak, W. Yang, P. Adams, R. Falcone, Z. Hussain, *Photon Science at the ALS for Sustainable Energy*, Synchrotron Radiation News **23**, 8 (2010).

H. Bluhm, J. Guo, A. Braun, C. Heske, *Soft X-ray Spectroscopy in Renewable Energy Generation and Storage Materials*, Synchrotron Radiation News **23**, 12 (2010).

T. Kendlewiecz, S. Kaya, J.T. Newberg, H. Bluhm, A. Nilsson, G.E. Brown, *Photoemission Study of the Reaction of Fe₃O₄(100) with Water at Near-Ambient Conditions*, Geochim. et Cosmochim. Acta **73**, A638 (2009).

G.E. Brown, Jr., A. Nilsson, A.M. Spormann, W.P. Addiego, K. Benzerara, U. Bergmann, H. Bluhm, B.A. Brown, G. Calas, A.M. Chaka, B.R. Constantz, F. Farges, S.E. Fendorf, A.L. Foster, F. Juillot, G. Morin, S.C.B. Myneni, L.G.M. Pettersson, K.M. Rosso, J.J. Ryuba, M. Salmeron, J. Saltzman, M. Toney, T.P. Trainor, T.-H. Yoon, *The Stanford Environmental Molecular Science Institute – A Focus on Chemical and Microbial Processes at Environmental Interfaces*, The Geochemical News, No. **128**, July 2006.

H. Bluhm, B.S. Mun, M. Salmeron, *Ambient pressure X-ray photoelectron spectroscopy*, Synchrotron Radiation News **21**, 6 (2008). H. Bluhm, M.K. Gilles, B.S. Mun, T. Tyliszczak, *Novel approaches to soft-X-ray spectroscopy: scanning transmission X-ray microscopy and ambient pressure photoelectron spectroscopy*, Synchrotron Radiation News **19**, 9 (2006).

U. D. Schwarz, H. Hoelscher, H. Bluhm, O. Zwoerner, R. Wiesendanger, *Tip-Sample Interaction in Contact Force Microscopy*, Physikalisch-Technische Bundesanstalt, PTB-Bericht F-30, 1-9 (1997).

Invited Conference Talks:

(in addition more than 40 invited seminar and colloquiums talks)

H. Bluhm (2015), *Investigation of solid/vapor, solid/liquid and liquid/vapor interfaces using photoelectron spectroscopy*, Gordon Research Conference on Chemical Reactions at Surfaces, February 8-13, Ventura, CA.

H. Bluhm (2014), *Photoelectron spectroscopy under ambient relative humidity*, Plenary Talk, Workshop on "Surface Chemistry and NAP-XPS: New tools and new paradigms", December 10-12, Gif-sur-Yvette, France.

H. Bluhm (2014), *Water at interfaces*, Seminar talk, NORDITA Meeting on "Water – the most anomalous liquid", November 2-6, Stockholm, Sweden.

H. Bluhm (2014), *Ambient pressure X-ray photoelectron spectroscopy for environmental science and energy research*, 30th European Conference on Surface Science, August 31- September 4, Antalya, Turkey.

H. Bluhm (2014), *Heterogeneous interfaces investigated under operating conditions using ambient pressure X-ray photoelectron spectroscopy*, Shell Centennial Analytical Conference, March 27-28, Amsterdam, The Netherlands.

H. Bluhm (2013), *Interfacial chemistry of surfaces under ambient humidity studied using ambient pressure XPS*, 9th International Symposium on Atomic Level Characterizations for New Materials and Devices '13 (ALC '13), December 1-5, Kona, HI.

H. Bluhm (2013), *Heterogeneous Reactions on Ice and Metal Oxide Surfaces Studied In-Situ by X-Ray Photoelectron Spectroscopy*, 2013 Eastern Analytical Symposium & Exposition, November 18-20, Somerset, NJ.

H. Bluhm (2013), *Interfacial chemistry of surfaces under ambient humidity studied using ambient pressure XPS*, National Synchrotron Radian Research Center Annual User Meeting, September 4-5, Hsinchu, Taiwan.

H. Bluhm (2013), *Ambient pressure photoelectron spectroscopy*, Workshop on Operando Research in Catalysis, June 24-28, Leiden, The Netherlands.

H. Bluhm (2012), *Ambient pressure photoelectron spectroscopy for energy research and environmental science*, American Vacuum Society 59th International Symposium & Exhibition, October 28-November 2, Tampa, FL.

H. Bluhm (2012), *In situ Microscopy and Spectroscopy at the Molecular Environmental Science Beamline at the ALS*, Eighth Condensed Phase and Interfacial Molecular Science (CPIMS) Research Meeting, October 21-24, Potomac, MD.

H. Bluhm (2012), *Current status and future trends in ambient pressure photoelectron spectroscopy*, MAX-lab Annual User Meeting "MAX IV Years Away", September 24-26, Lund, Sweden.

H. Bluhm (2012), *Ambient pressure photoelectron spectroscopy for energy research and environmental science*, 244th American Chemical Society National Meeting & Exhibition , August 9-13, Philadelphia, PA.

H. Bluhm (2012), *Ambient pressure photoelectron spectroscopy for energy research and environmental science*, 11th International Conference on Synchrotron Radiation Instrumentation, July 9-13, Lyon, France.

H. Bluhm (2012), *Ambient pressure photoelectron spectroscopy for energy research and environmental science*, Surface Analysis '12, June 19-22, Pacific Northwestern National Laboratory, Richland, WA.

H. Bluhm (2012), *Ambient pressure photoelectron spectroscopy for energy research and environmental science*, NSLS/CFN Users Meeting, May 21-23, Brookhaven National Laboratory, NY.

H. Bluhm (2011), *Characterization of combustion products and processes using soft X-ray spectroscopies*, Workshop on Techniques for High-Pressure Combustion, August 29-September 1, Argonne National Laboratory, IL.

H. Bluhm (2011), *Heterogeneous Chemistry at Interfaces Probed by X-ray Photoelectron Spectroscopy: From Soot Particles to Aerosol Droplets*, Gordon Research Conference on Laser Diagnostic in Combustion, August 14-19, Waterville Valley, NH.

H. Bluhm (2011), *Application of ambient pressure XPS to catalysis and electrochemistry*, 2011 Materials Research Society Spring Meeting, April 25-29, San Francisco, CA.

H. Bluhm (2010), *Ambient pressure scanning photoelectron microscopy*, SPEM 2010 – 1st International Workshop on SPEM, December 13-14, Trieste, Italy.

H. Bluhm (2010), *Photoelectron spectroscopy at elevated pressures*, MaxLab User Meeting, November 8-10, Lund, Sweden.

H. Bluhm (2010), *Ambient pressure X-ray photoelectron spectroscopy under humid conditions*, AVS 57th International Symposium, October 18-22, Albuquerque, NM.

H. Bluhm (2010), *Ambient pressure X-ray photoelectron spectroscopy*, 16th Pan-American Synchrotron Radiation Instrumentation Conference, September 21-24, Chicago, IL.

H. Bluhm (2009), *The surface of water and ice: a perspective from photoemission spectroscopy*, Telluride Research Conference on Cloud Electrification, August 9-13, Telluride, CO.

H. Bluhm (2009), *Opportunities for ambient pressure photoemission spectroscopy using hard X-rays*, International Workshop for New Opportunities in Hard X-Ray Photoelectron Spectroscopy: HAXPES2009, May 20-22, Upton, NY.

H. Bluhm (2009), *Ambient pressure photoemission spectroscopy with spatial resolution*, Center for Functional Nanomaterials/National Synchrotron Light Source User Meeting, May 18-20, Upton, NY.

H. Bluhm (2009), *Ambient pressure photoemission spectroscopy*, The 31st Annual Symposium on Surface Analysis, April 22-24, Santa Cruz, CA.

H. Bluhm (2009), *Photoelectron spectroscopy of surfaces under humid conditions*, Interdisciplinary Surface Science Conference (ISSC-17), March 30-April 2, Reading, United Kingdom.

H. Bluhm (2009), *Investigation of aerosol/vapor interfaces*, AirUCI workshop, January 27-28, Laguna Beach, CA.

H. Bluhm (2008), *Introduction to ambient pressure XPS*, Synchrotron Environmental Sciences IV (SES IV) conference, December 11-13, San Francisco, CA.

H. Bluhm (2008), *Investigation of vapor/solid and vapor/liquid interfaces using ambient pressure photoemission spectroscopy*, Workshop on Energy and Environmental Science with Synchrotron Radiation, ALS User Meeting, October 13-15, Berkeley, CA.

H. Bluhm (2008), *Water adsorption on oxide and metal surfaces: from UHV to ambient conditions*, 25th European Conference on Surface Science (ECOSS), July 27 – August 2, Liverpool, United Kingdom.

H. Bluhm (2008), Ambient pressure photoemission spectroscopy for energy research, Workshop on “New frontiers for synchrotron studies of energy-related chemistry, March 27-28, Berkeley, CA.

H. Bluhm (2008), *Ambient pressure photoemission spectroscopy for heterogeneous catalysis*, ESRF User Meeting, February 5-7, Grenoble, France.

H. Bluhm (2007), *Investigation of liquid/vapor and ice/vapor interfaces using ambient pressure photoemission spectroscopy*, International Workshop on Molecular Structure and Dynamics of Interfacial Water, December 14-18, Shanghai, China.

H. Bluhm (2005), *Ambient pressure XPS for catalysis research*, CNRS Ecole thematique “Nouveaux outils pour l'étude in situ des surfaces et nano-objets”, May 11, Aussois, France.

H. Bluhm (2003), *High-pressure XPS for catalysis research and environmental science*, ICCESS-9 International Conference on Electronic Spectroscopy and Structure, Uppsala, Sweden, June 30 - July 4.

H. Bluhm (2002), *In situ photoemission spectroscopy investigation of the methanol oxidation over copper*, Workshop “Catalysis from first principles”, Wien, Austria, February 21-23.

H. Bluhm (2000), *Photoelectron Spectroscopy of Water near the Triple Point*, Western Regional Conference of the American Chemical Society, San Francisco, CA, USA, Oktober 25-28.

H. Bluhm (2000), *The liquid-like layer on ice*, Physics by the Bay, Berkeley, CA, USA, September 16.

H. Bluhm (2000), *The liquid-like layer on ice: A NEXAFS Study*, EMSL 2000 (Environmental Molecular Sciences Symposia), Pacific Northwestern Laboratory, Richland, WA, USA, June 22-23.